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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/977,297	BUCHALI, FRED	
	Examiner	Art Unit	
	Nathan Curs	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2006 and 06 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 5 objected to because of the following informalities: the phrase "...according to claim 3, results of measurement of the eye opening..." is grammatically improper. It should be changed to "...according to claim 3, wherein results of measurement of the eye opening..." or similar. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tremblay et al. (4823360) in view of Sakamoto et al. (US Patent No. 5736875).

Regarding claims 1 and 3, Tremblay et al. disclose a receiver for receiving optically transmitted signals, the receiver comprising an optical/electrical converter (fig. 4, element 82), an electronic feedback filter (fig. 4, elements 90 and 102 and fig. 3, elements 42 and 48) and at least one eye monitor for determining a quality of a transmission link (fig. 4, element 26 and col. 5, lines 30-45), an output of the at least one eye monitor being connected to an input of the electronic feedback filter (fig. 4, element 102 and fig. 3, element Vopt), wherein the eye monitor comprises: first and second threshold-value decision elements for deciding a level of a data signal based on first and second threshold values (fig. 3, elements 40 and 44 and col. 4, lines 1-34 and col. 5, lines 1-7) which are set close to vertices of an eye opening of an eye diagram

(figs. 1 and 2a-2c and col. 3, lines 20-46); first and second signal comparators for determining pseudo-errors by comparing decided signals output by the threshold-value decision elements with a correct signal (fig. 3, elements 52 and 54 and col. 4, lines 18-34); first and second integrators for integrating the pseudo-errors output by the first and second signal comparators to generate first and second internal control variables (fig. 3, elements 60, 64, 68 and 62, 66, 70 and col. 4, lines 18-34). Tremblay does not disclose first and second regulators which correct the first and second threshold values based on comparisons between the first and second internal control variables and first and second setpoint values, respectively. Sakamoto teaches a "discriminator" circuit used for regenerating received optical signals, with a similar structure to the regenerator of Tremblay et al. (figs. 1 and 5 and col. 5, line 65 to col. 6, line 67), where the circuit uses regulators (fig. 5, elements 22 and 23). It would have been obvious to one of ordinary skill in the art at the time of the invention to use regulators for the output of the integrators of Tremblay et al., in order to provide the benefit of comparing thresholds derived from the regenerator of Tremblay et al. with reference voltages for controlling the thresholds, based on the teaching of Sakamoto et al.

Regarding claim 2, the combination of Tremblay et al. and Sakamoto et al. discloses a receiver according to claim 1, where the receiver comprises two eye monitors (Tremblay et al.: fig. 3, elements 40, 46, 52, 56, 60, 64, 68 and elements 44, 50, 54, 58, 62, 66, 70), outputs of which are connected to the inputs of the electronic feedback filter (Tremblay et al.: fig. 4, elements 102 and 90), the two eye monitors measuring the eye opening of the signal (Tremblay et al.: fig. 3, elements V+ and V-) and outputting it as a parameter signal (Tremblay et al.: fig. 3, element Vopt).

Regarding claim 6, the combination of Tremblay et al. and Sakamoto et al. discloses a method for measuring the eye opening of an eye diagram, the method comprising: determining

a level of a data signal based on first and second threshold values which correspond approximately to vertices of the eye opening (Tremblay et al.: figs. 2a-2c and col. 3, lines 34-46), to generate first and second data signals with pseudo-errors and detecting first and second pseudo-errors by comparing the first and second data signals with a correct signal (Tremblay et al.: fig. 3, elements 52 and 54 and col. 4, lines 1-34), and integrating the first and second pseudo-errors (Tremblay et al.: col. 4, lines 57-63 and col. 5, lines 1-7); and generating a differential signal of the corrected first and second threshold values as a measurement value of the eye opening (Tremblay et al.: col. 5, lines 30-37). Tremblay et al. do not disclose comparing the integrated first and second pseudo-errors with first and second setpoint values and correcting the first and second threshold values based on the comparisons between the integrated first and second pseudo-errors and the first and second setpoint values. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings Sakamoto et al. with Tremblay et al. as described above for claims 1 and 3.

Regarding claim 7, the combination of Tremblay et al. and Sakamoto et al. discloses a method for determining a garbled signal, the method comprising: determining the signal with a feedback filter which makes decisions on the basis of set threshold values (Tremblay et al.: fig. 3, element Vopt, 42 and 48 and col. 3, lines 47-68); determining an eye opening of the signal with first and second eye monitors which determine eye edges at vertices of the signal and supply a result to the feedback filter as a parameter (Tremblay et al.: figs. 2a-2c and col. 3, lines 20-46 and col. 5, lines 63-68); and setting the threshold values of threshold value decision elements in the feedback filter, the parameter being used for setting of the threshold values so that the signal is determined in the eye optimum (Tremblay et al.: col. 3, lines 47-68), wherein the determining the eye opening comprises: determining the signal based on first and second

threshold values which correspond approximately to vertices of the eye opening (Tremblay et al.: figs. 2a-2c and col. 3, lines 34-46), to generate first and second data signals with pseudo-errors and detecting first and second pseudo-errors by comparing the first and second data signals with a correct signal (Tremblay et al.: fig. 3, elements 52 and 54 and col. 4, lines 1-34), and integrating the first and second pseudo-errors (Tremblay et al.: col. 4, lines 57-63 and col. 5, lines 1-7); and generating a differential signal of the corrected first and second threshold values as a measurement value of the eye opening (Tremblay et al.: col. 5, lines 30-37). Tremblay et al. do not disclose comparing the integrated first and second pseudo-errors with first and second setpoint values and correcting the first and second threshold values based on the comparisons between the integrated first and second pseudo-errors and the first and second setpoint values. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings Sakamoto et al. with Tremblay et al. as described above for claims 1 and 3.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tremblay et al. (4823360) in view of Sakamoto et al. (US Patent No. 5736875) as applied to claims 1-3, 6 and 7 above, and further in view of Bulow (US Patent No. 6016379).

Regarding claim 4, the combination of Tremblay et al. and Sakamoto et al. discloses the high-speed eye monitor according to claim 3, but do not disclose that the setpoint values are superimposed by small-signal components. Bulow disclose using a variation device superimposed on the Q value-based control of the equalization circuit, in order to enable the equalization control to optimally adapt to changes in signal quality over time (fig. 1, element 9 and col. 4, lines 53-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a small-signal variation signal superimposed on the setpoint values of

Sakamoto et al. in order to enable the equalization control to optimally adapt to changes in signal quality over time, as suggested by Bulow.

Regarding claim 5, the combination of Tremblay et al. and Sakamoto et al. discloses the high-speed eye monitor according to claim 3, but does not disclose that results of measurement of the eye opening and a small signal response are used in the internal control variables for determination of the Q-factor. Bulow disclose using a variation device superimposed on the Q value-based control of the equalization circuit, in order to make it easier to monitor the Q-factor (fig. 1, element 9 and col. 4, lines 53-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a small-signal variation signal superimposed on the setpoint values of Sakamoto et al. in order to make it easier to monitor the Q-factor, as suggested by Bulow.

Response to Arguments

5. Applicant's arguments filed 5 January 2006, with respect to Tremblay et al. missing the claimed first and second "regulators", have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sakamoto et al.

Conclusion

6. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the

organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600